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ABSTRACT

The booklet reviews and illustrates program evaluation methods that can be used by providers of services to handicapped infants and their families. It distinguishes between outcome evaluations to determine the effectiveness of service programs and process evaluations to describe the actual activities of service programs and their relation to program goals and objectives. Various approaches to conducting outcome evaluations are summarized; the steps involved in conducting process evaluations are described in greater detail. A summary of resources for conducting evaluation activities, using either outside evaluators or existing staff, is also included along with a list of appropriate publications. Descriptions of program evaluations conducted by seven actual programs are used to illustrate the methodology employed and underscore the benefits provided. An appendix discusses "domains of concern," i.e., those areas connected to the development or impairment, support or stress of a young child or family. They are areas where change may be observed over time as well as areas that may serve as targets for intervention (interaction between service provider and family, the parent, the child, parent-infant interaction, the child's family, and the community). (VW)

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Charting Change in Infants, Families and Services

A guide to program evaluation for administrators and practitioners

National Center for Clinical Infant Programs

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A guide to program evaluation for administrators and practitioners

National Center for Clinical Infant Programs
Washington, D.C. 1987

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Introduction

Professionals serving children and families in the earliest years of life are becoming increasingly knowledgeable about the complex factors involved in the development of young children. They also are becoming increasingly comprehensive in their intervention approaches to infants, toddlers and their families. Service providers recognize the need to evaluate these efforts, but they often hesitate to undertake even modest evaluation activities—questioning whether the staff time and expertise they can devote to such endeavors are likely to produce meaningful, useful information.

The National Center for Clinical Infant Programs, a non-profit organization concerned with infant health, mental health and development, is aware of the many demands on service providers but also recognizes the importance of evaluation efforts to progress in the field of work with young children and families. The National Center therefore established a Program Evaluation Task Force to address these issues, composed of members of the NCCIP Board and other national experts in research and program evaluation involving normal, disadvantaged and disabled young children and their families. "Charting Change in Infants, Families and Services" is one product of the Task Force's efforts.

This booklet suggests that all programs serving young children and families *can* and *should* engage in evaluation. Appropriate evaluation procedures can serve to:

- improve understanding of a program's operation;
- make possible more informed decisions about the allocation of program resources;
- enhance the professional development and self esteem of program staff; and
- lead to better services for the program's clients.

Program evaluation can also help to answer the questions of clients, legislatures, and funding sources. When they ask "What are early intervention programs achieving?" we hope that service providers who have taken the steps outlined in this publication will be able to respond, "Some fascinating things are happening as we work with children and families. Let us tell you about them."

Program Evaluation: Answering Key Questions

Over the past twenty years, studies of service programs designed to enhance the development of children of pre-school age and younger have found important positive impacts on children with a variety of handicapping conditions as well as on children living in disadvantaged environments (Zigler (1983) Greenspan and White (1985)). These research findings have been extremely important in shaping the strategies employed to express our society's commitment to the well-being of young children and families. One does not, of course, "research" whether babies should have adequate nutrition, decent housing, appropriate health care and a loving environment. These are not research questions, but rather issues of basic social philosophy.

Good research always suggests new questions. Knowing that programs to enhance the development of infants and toddlers are generally beneficial is not enough. Policymakers and service providers need to know what kinds of services are most helpful to children and families facing *particular* kinds of risks to healthy development. We need to understand the impact that service programs can make on a wide range of areas of child and family functioning, areas often not studied by earlier investigators. We need to learn more about the importance of key elements in actual service delivery, such as accessibility, and the quality of the relationships between practitioners and participants. We need to examine why some infants and families who participate in programs still fail to make progress or deteriorate in their functioning.

To answer such questions, investigators can conduct studies to determine the *effectiveness* or *outcomes* of service programs. They can also conduct *process evaluations* to describe the actual activities of service programs and their relation to program goals and objectives.

Thoughtful and well-executed outcome and process evaluations both contribute valuable information to work with infants, toddlers and their families. Both approaches are needed to guide policy development, resource allocation, and the incorporation of promising models into coordinated, comprehensive systems of services. We will outline briefly the aims and characteristics of outcome and process evaluation approaches, describing in greater detail the steps involved in process evaluation.

Outcome evaluations

Researchers conduct *outcome evaluations*, sometimes referred to as efficacy or summative studies, to determine the effects of participation in a service program. In this kind of evaluation, data are collected to decide whether the children and families who participated in a particular intervention are any different than they would have been had they participated in no service program, or if they had participated in an alternative program. In other words: did the program itself make a difference?

If this question is to be answered, one needs some method of estimating the performance of children and families who are similar to the program participants but who received no services or different services. Social science researchers have devised a number of strategies to achieve such comparisons.

- In a **true field experiment,** individuals or families with certain characteristics are randomly assigned either to the program whose effects are being studied or to a control group that will not receive program services. This procedure, closest to the laboratory model of research, helps to rule out alternative explanations for the results observed. It is also possible to compare alternative forms of an intervention program or to compare an innovative program with a standard model of service. Participants will still be assigned randomly, but no one will be unserved.

"Quasi-experimental" research designs have been identified that attempt to approximate the conditions of true field experiments while recognizing the ethical and practical complexities of simultaneously serving and studying young

children and families. Examples of quasi-experimental designs include:

- A **time lag design,** which can be used by a program that has been discontinued, or by a program with a waiting list. In the first instance, a control group is selected from people who meet the criteria for service had the program continued. In the second instance, participants are recruited and basic information gathered before program services begin.
- **Nonequivalent control group designs,** in which other individuals, groups or even whole communities are studied as "comparison" rather than as "control" groups, typically matched on variables such as sex, race, or social status.

Additional sources of data may be used to complement experimental or quasi-experimental outcome evaluation findings. These data may also be useful indicators for programs that are not currently undertaking formal outcome evaluations but that are trying to identify areas of likely program impact. Such sources include:

- **Data compiled by other agencies** and which may be examined with participant permission, including medical records, (documenting both health status and the use of medical services); school records; marriage, divorce; and birth records; and information on involvement with the criminal justice system.
- **Ratings by others,** which may include teachers' reports of the socioemotional functioning of children who had participated in a program, parents' perceptions of their children, or friends' assessment of families. (Of course, program participants must give permission for such data collection.)

Outcome evaluation strategies are discussed in detail by Campbell and Stanley (1963, 1966), Cook and Campbell (1979), Zigler and Berman (1983), Seitz, Rosenbaum and Apfel (1985) and Price and Smith (1985). They stress the "solid evidence for effectiveness" to be obtained from well-conceived and rigorously executed outcome evaluations. They do not minimize the work involved—designing the evaluation, gathering data and analyzing information may involve as much effort as providing the services. And they emphasize the importance of timing in the conduct of outcome evaluation, suggesting that an outcome evaluation may be appropriate only after a project has become relatively stable.

Service providers interested in undertaking outcome evaluations will almost always want to collaborate with others beyond existing program staff. Experienced evaluators from nearby colleges and universities may represent the resource most widely available to service providers. Federally funded research, demonstration, outreach or technical assistance projects represent another source of help.

Process evaluations

Process evaluation has program improvements as its primary aim. It looks at a program's own goals and objectives and then uses whatever methods seem sensible and feasible to measure the degree to which program activities are related to these goals, as well as the degree to which these goals and objectives are actually being achieved. Information from process evaluations should be used to modify service programs and to suggest further areas for . .uation as an ongoing effort. The detailed description that is part of such a process evaluation is invaluable for replication of a program.

Features of a well-designed and executed process evaluation would also be part of an efficacy evaluation. They include:

1 A clear statement of specific goals and objectives for the program as a whole and of individual objectives for each participating child and family;

2 Detailed, systematic record-keeping on each child and family;

3 Clear description of the program, including estimates of cost;

4 A well-articulated rationale describing how program activities are expected to achieve specific objectives;

5 Description of the population served, in quantitative and clinical terms;

6 Description of the institutional and community context in which the program operates and families live;

7 Monitoring of the extent to which the program was actually carried out as planned, including description of the service providers' interaction with each individual child and parent;

8 Identification of those children and families who make progress and those who do not;

9 Identification of negative side effects of the program.

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Zigler, E. and Berman, W. Discerning the future of early childhood intervention. *American Psychologist*, Vol. 38, No. 8: 894-906, August, 1983.

Process Evaluation for Service Providers

All service providers should be engaging in some form of ongoing process evaluation, whether or not they are ready for a formal outcome evaluation. A program's own staff can design and implement ongoing record-keeping activities that not only keep the program accountable to families and sponsors but that also suggest avenues for program improvement. Process evaluation activities can also supply detailed information about areas of unmet need and suggest strongly the areas of child and family functioning in which the program is making an impact.

How this can happen will be discussed as the steps in process evaluation are described and examples of fruitful process evaluations are offered.

STEP 1 Clarifying Goals and Objectives by Examining Domains of Concern

Formerly, and to some extent even today, many programs serving young children were based on the hypothesis that a baby or pre-schooler who was "stimulated" would become "smarter" and would perform better in school. Evaluation of these programs typically used change in the child's intelligence quotient (IQ) to measure program effectiveness. In the early 1970's, a number of demonstration programs began to emphasize the potential importance of parents as *mediators* of a program's effects on children. Early childhood programs shifted their emphasis to involve parents and to examine, and attempt to enhance, the quality of their caregiving skills. More recently, researchers and service providers have recognized that a host of factors interact in the development of the young child and family. These factors are interdependent: a change in one area is likely to trigger change in another. By the same token, if a certain factor is impervious to alteration, the possibility of change in other areas may be diminished.

A program serving infants, toddlers and their families needs to be aware of a wide range of areas which affect and are affected by the development of the child. We call these *domains of concern:* these include aspects of the child, the parent, the parent-infant relationship, the family and the community. From among these domains, a program will generally select some areas on which to focus intervention. In planning such intervention and in observing change in infants and families, the program should look not only at the target domains of concern but at others as well.

For example, a program serving infants and toddlers with cerebral palsy may be in the process of expanding its goals to include not only enhancement of the child's cognitive and motor skills but also of the interaction between the child and his parents and siblings. To plan appropriate intervention approaches, the provider might decide to try to understand something of the strengths and vulnerabilities of each family member, of the way the family works as a unit, of sources of support parents can count on, or of stresses that must be faced. Similarly, when such a program looks at the progress of participating families over time, staff may want to know how siblings are doing in school, how the marriage is faring, and something about the attitudes of grandparents.

The appendix which is an essential part of this publication describes domains of concern in some detail. We recognize that no single program could attempt to address all the domains listed but hope to encourage service providers to think broadly about the range of factors that affect child and family development in the earliest years of life and about how service programs may have a positive impact. Such an examination should aid in suggesting what domains a program is most likely to affect and how one might more readily track these changes.

There is one domain, however, that every program needs to address—the interaction between service provider and family. Because a trusting relationship is an essential element in

the delivery of service to young children and their families, systematic attention needs to be paid to the interaction between service provider and program participants. Some specific areas for evaluating this domain are also included in the appendix.

Having identified the domains of concern which represent its focus, a service program needs to articulate the specific goals and objectives for the program as a whole and individual objectives for each participating child and family. The clear statement of goals and objectives may be the most important step in any process evaluation. This is the major way in which a program is *compelled* to articulate what its intent really is. Program staff should be involved in the process of formulating or reviewing the statement of the program's mission. Input from consumers of services—parents and families—should be sought as well. When everyone is clear about goals and objectives for the program and for participants, planning appropriate intervention, keeping relevant records, and administering the program will be improved.

STEP 2 Articulating the Conceptual Underpinning of a Chosen Intervention Approach

We have no comprehensive theory of child and family development at present. But practitioners working with infants, toddlers and their families can draw on a wealth of observational data, theoretical constructs and clinical experience in many fields to help them articulate the theoretical justification for program activities. The conceptual link between an intervention approach and the target domain(s) of concern should always be clear.

For example, program staff may be aware of research suggesting that a responsive care-taking environment is important to the healthy development of premature infants; of observations that premature infants send weak and confusing signals to their parents; and of other programs' experience that helping parents, in general, interpret their babies' behavior makes the parents feel more competent as parents. The service providers may decide that, since promoting mutually satisfying parent-infant interaction is one of its goals, they will help parents interpret the meaning of their premature infants' behavior.

Program administrators and staff also may be aware of evidence suggesting that families experiencing multiple stresses are less able than other families to focus on their babies' needs, even when clearly expressed. Program staff may anticipate that this group of multiply stressed parents would show smaller positive changes in responsiveness to their premature infants' cues than more fortunate parents. The program staff might then formulate an intervention plan that simultaneously offered concrete services to reduce family stress and, in the context of an active outreach effort, interpreted the premature infant's behavior to parents and other family members.

Staff of a program serving premature infants and their families may decide to help parents better interpret their babies' behavior as a discrete intervention or as one element of a more comprehensive service plan. Staff may decide to use one approach with a certain group of clients and other approaches with other groups of clients with differing characteristics. The elements are essential: 1) that staff link any planned intervention to a program goal and 2) that staff ensure that interventions and program goals are appropriate to the program's clientele in general, and to each family in particular.

STEP 3 Collecting Data

The data program staff collect should reflect the program's goals and the intervention approaches employed, and the services actually delivered.

At a minimum, program staff should be able to say how many people were seen, for how long, and how intensively—for example, "We saw 250 infant-and-mother pairs this year; we saw most of them for 5 visits; we saw ten of them for 20 visits."

Although many instruments exist that attempt to measure single or multiple aspects of child and family functioning, their precision may not really apply to the issues a particular program is concerned about. In outcome evaluations, psychometric precision may be relied on more heavily than the clinician's deeper, ongoing knowledge and understanding of individual children and families. Process evaluations can attempt to capture some of the qualitative complexities of the work being done.

For purposes of program evaluation, there is no substitute for appropriately detailed individual case records. These records describe each child and family served by the program, their demographic characteristics, specific strengths and needs, and the interventions planned. These records are also the source of documentation for the efforts made to achieve objectives set for each child and family. Improvements in functioning, responses to service providers, and problems with program execution can all be described. Staff may choose to devise check lists or rating scales to facilitate the aggregation and analysis of data, but the documentation for such ratings must exist in the case record.

All staff should be involved, from the beginning, in planning the tools and process of data collection. Demands for information imposed from on high and seen as merely "paperwork" are likely to generate resentment. More likely to be useful is a process in which all staff members agree on the questions they really want to answer and plan together ways of finding out what they want to know. For example, staff may set out to discover what percentage of participating families are at home for scheduled visits. They may then examine case records in an attempt to discover whether there is anything that distinguishes those who are at home from those who are not. A process evaluation can begin with questions like these. If the answers lead staff to identify problems and possible causes, formulate new approaches, and adopt practices that increase the percentage of completed home visits, the investigation will have made a difference in the daily life of staff, as well as in the lives of children and families. The answers also suggest new questions, and the process continues.

Parents who are current or former participants in the program may be invaluable collaborators in developing issues to investigate and devising interview guides or other tools that are relevant and appropriate.

Accountability and monitoring data already being collected by staff should be incorporated into program evaluation efforts wherever possible. Looked at with program objectives and broader domains of concern in mind, these data can yield valuable insights about what is being accomplished, the pattern of service usage by different kinds of families, and costs.

Staff should take the time to struggle with measures that truly reflect the complexity of the work that is being done with infants and families. For example, a program's capacity to respond in crises may be a critical element of its value to participants. One might document not only how many telephone contacts take place but also at what hour of the day or night. (A program whose switchboard shuts down at 5 need not be surprised then if it cannot replicate the findings of a program with a 24-hour hot line.)

STEP 4 Looking at Data

To look for basic patterns in data, service providers need not have elaborate methods of analysis or equipment, although the increasing availability of personal computers is a boon. In using any of these methods, one should pay particular attention to the changes that occur over time, in the functioning of both child and family.

One can begin with simple *tallies*: How many families received services in a given period? What were their demographic characteristics? How many home visits, office visits, phone calls, consultations were made? What issues were addressed in these contacts? How did children and families score on whatever assessment measures were used by the program?

One then may look for patterns and trends by *grouping data*. What percentage of all the preterm babies born in a hospital in a given period were seen by the hospital follow-up program? What percentage of the objectives set at the beginning of program participation were achieved by each family in six months? By the end of the family's participation in the program? What were the six most common problems faced by families? In what areas did families tend to make the most change? The least change?

One looks for *correlations*—what factors seem associated with positive change, what factors with persistent difficulties? One looks at *subgroups*—do a small number of children or families share characteristics that seem associated with certain strengths or that seem to require a highly specialized approach?

Statistical consultants can be helpful to service providers in analyzing data. Increasingly, personal computer software can be used to perform a range of reasonably sophisticated statistical manipulations.

Service providers should also look critically at their measures as they analyze data. At our current state of knowledge, measures and scales do not necessarily document precisely the

phenomena clinical observations record. A failure to find significant data may tell us more about the imperfect state of measures used than about how infants and families function or change.

STEP 5 Using Information to Improve Services

If program evaluation efforts are to improve service to clients, prompt and frequent feedback to staff is essential for two reasons. First, a knowledge of preliminary findings whets curiosity and maintains interest in the evaluation process itself. Such feedback can be used to modify record-keeping systems or data collection tools that are cumbersome or unproductive early on.

Second, when all staff share information early and often, they grow as individual professionals and as a functioning group. They see evidence of positive change and experience a clearer delineation of barriers to progress. They can begin thinking, individually and collectively, about what the data mean and how outcomes may be improved. When program approaches seem to be working or when they can grapple with the observation that they are *not* succeeding, staff are confirmed as competent professionals. If progress is disappointing, staff can take an active role in trying to understand the factors involved, rather than persisting in unproductive patterns, heading for burn-out.

As program and administrative staff look together at process evaluation findings, ideas are likely to occur for program improvement along a range of dimensions. For example, information about the participants served may suggest outreach efforts for those segments of the target population *not* using the service. Comparing participants who seem to be responding to program approaches with those who are not may lead to a better individualization of services, to recognition of the need for a new program component or to placing higher priority on the most productive efforts. Further, process evaluation may suggest areas in which in-service training funds will be spent most usefully, or spotlight a particular community agency or group of professionals with whom better coordination is needed on behalf of program children and families.

Of course, the steps taken to improve program services should themselves be evaluated. Particularly if a staff has begun the evaluation process rather gingerly, a sense of the progression from question, to information, to plan for improvement, to re-evaluation may be very helpful in generating support for further efforts.

STEP 6 Letting One's Light Shine

Having gotten this far, administrators and staff of a service program should have a very good understanding of their program.

- They will be clear about the program's goals and objectives and about why, of all the possible aspects of infant and family development one could address, they have chosen to concentrate their efforts as they do.
- They can describe the questions their process evaluation was designed to answer, how they gathered information and what they found. They will have quantitative data, backed up by clinical documentation, about how children and families have fared during, and possibly after, their participation in the program. They may be able to describe the characteristics that distinguish children and families with better outcomes from those with poorer.
- They will have already begun to use information from process evaluation to make improvements in services to infants and families. They will be able to use continued funding more efficiently, describe unmet needs, and may have excellent ideas about what special approaches may be useful for those participants who are not responding as anticipated to current intervention.
- Participation in planning and conducting a process evaluation is likely to have resulted in increased staff self-esteem, cohesion and morals.

This news should be shared—with the program's board, with other agencies, with referral sources, with funders, with participating families and with local media. Parents can be particularly effective in this process. The clear descriptions of program goals, objectives and activities that are part of a well-conducted process evaluation can also be useful for others who wish to replicate program approaches.

A process evaluation will not definitively prove that it was participation in the program that accounted for the gains achieved by children and

families involved. But if an evaluation truly reflects the functioning and purposes of a service program and provides information that improves the program's work, it will have accomplished a great deal.

Resources for Conducting Evaluation Activities

Although process evaluations of the nature described in this booklet can often be conducted by existing program staff, there may be times when an external evaluator is desired. In such cases there are a number of resources that should be considered. Probably the most widely available source is nearby colleges and universities. Departments of education, psychology, sociology, human development, or special education and schools of medicine and public health frequently have faculty who are experienced evaluators and are willing to become involved in such projects on a fee-for-services basis.

Federally funded research, demonstration, outreach, or technical assistance projects represent another resource. For example, the Office of Special Education Programs within the U.S. Department of Education provides funding for six Regional Resource Centers which are mandated to provide technical assistance to state and local education agencies in implementing the requirements of the Education of the Handicapped Act. Most Regional Resource Centers have several evaluation specialists on their staff. Similarly, the Department of Education annually funds 6-10 Research Institutes and dozens of early childhood demonstration and outreach projects. Staff members from some of these projects might be available free of charge to provide limited amounts of evaluation assistance. Other federal agencies which fund early childhood and family support programs likely to employ one or more evaluation specialists include the Division of Maternal and Child Health, Bureau of Health Care Delivery and Assistance; the Administration on Developmental Disabilities; the Administration on Children Youth and Families; and the National Institute of Child Health and Human Development, all in the Department of Health and Human Services.

Because there is no central registry of all federally funded projects, it can sometimes be somewhat difficult to locate the projects which are operating in a particular geographic area. Contacts at local colleges and universities or State Departments of Health or Education can usually provide some information. If local sources of information are inadequate, agency offices in Washington, D.C. can provide lists of funded projects.

In hiring an external evaluator, a program should make sure that the person hired has had experience in conducting the type of evaluation it needs and is familiar enough with programs like the one to be evaluated that he or she can be responsive to the issues being examined. Written reports from past evaluations and references of previous clients are best indicators of past performance. In addition, it is important for the program staff to feel comfortable with and have confidence in the evaluator who is hired. Otherwise, cooperation will be limited and the final product will suffer.

Although external evaluators can provide a higher level of objectivity and may bring specific skills to the project, they are less familiar than program staff with the program's history, operation, and objectives and usually require additional resources. Many programs will therefore decide to conduct their evaluations using existing staff rather than an external evaluator. This is a perfectly appropriate and defensible option since a process evaluation is built on a logical analysis of what the program is trying to accomplish, what activities are being conducted, how clients and staff view those activities, and information about the degree to which services are being utilized. Collection of valuable information in each of these areas does not require extensive technical, statistical, or psychometric skills and can often be done well by people who are involved and familiar with the program.

At times, existing staff may be willing, but somewhat hesitant because of their inexperience. In such situations, background reading in several of the many "evaluation methods" books may provide the additional information which is necessary. Books which focus on highly technical or theoretical issues should be avoided in preference to those which emphasize the practical aspects of conducting evaluations—particularly process evaluations of the type emphasized in this booklet.

Listed below are a selection of appropriate publications, from among the many that are available.

Bowers, J.J. (1987). *Planning of Program Evaluation: An Educator's Handbook.* Philadelphia: Research for Better Schools, Inc.

Center for the Study of Evaluation, UCLA (1987). *Program Evaluation Kit* (eight handbooks). Beverly Hills, California: Sage Publications.

Educational Testing Service (1979). *Program Evaluator's Guide: The Evaluation Improvement Program.* Princeton, New Jersey: Educational Testing Service.

Fink, A. and Kosecoff, Jr. (1978). *An Evaluation Primer* and *An Evaluation Primer Workbook: Practical Exercises for Educators. Washington,* D.C.: Capitol Publications.

Hunt, P.J. (1978). *Program Evaluation Manual.* (Part I, Program Evaluation Process Guide. Part II, Utilization of Program Evaluation Data in Decision-Making Processes. Madeira Beach, Florida: Personnel Research and Training Institute.

Littell, J.H. (1986). *Building Strong Foundations: Evaluation Strategies for Family Resource Programs.* Chicago, Illinois: Family Resource Coalition.

Owens, T.R. and Evans, W.D. (1977). *Program Evaluation Skills for Busy Administrators.* Portland, Oregon: Northwest Regional Educational Laboratory.

Plakos, M., Plakos, J., and Babcock, B. (1978). *Workbook on Program Evaluation.* Princeton, New Jersey: Educational Testing Service.

Price, R.H. and Smith, S.S. (1985). *A Guide to Evaluating Prevention Programs in Mental Health.* Rockville, Maryland: National Institute of Mental Health.

Rose, C. and Nyre, G.F. (1977). *The Practice of Evaluation.* Princeton, New Jersey: ERIC Clearinghouse on Tests, Measurement and Evaluation.

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Process Evaluations Have Improved Programs

Process evaluations of the kind we have described have been undertaken by a wide range of programs engaged in the busy, demanding work of serving infants, toddlers, older children, adolescents and families. The vignettes that follow illustrate various aspects of process evaluation and the ways in which evaluation can contribute to better services.

(Each program will be identified in a footnote, so that readers can request more detailed information.)

CASE 1

In an upstate New York program, nurses visited adolescent, unmarried or low-income first-time mothers and their families beginning in late pregnancy and continuing through the second year of life. Overall goals of the program were to improve fetal growth and development, to improve infant health and development and to improve the life course development of mothers. Program staff specified nine major objectives designed to achieve these goals.

Home visit report forms, filled out by the nurses after each visit, were designed to reflect the objectives of the program and to reinforce them with staff on a daily basis. Additionally, nurses used computer forms to summarize their accomplishments at periodic intervals during the course of their work with each individual family. Where little or no success was noted, the nurses were asked to explain, in their judgment, why the program had not worked.

One of the program's objectives was to improve the health habits of pregnant women in the program—to reduce smoking, drinking and drug use among expectant mothers, and to improve their diet and weight gain. In the course of reporting on impediments to progress, nurses noted that some young pregnant women were so preoccupied with their own emotional adaptation to pregnancy that discussions of smoking, diet and weight simply did not register. In other instances, women's friends or family members displayed poor health habits themselves and, directly or indirectly, challenged the credibility of the nurses' advice. Some women lacked money to buy food or a place to cook or store it, and found themselves hard put to follow through with the nurses' advice to eat a more balanced diet.

Each type of problem led to a different strategy. Nurses made efforts, for example, to acknowledge and respond appropriately to women's emotional needs, so that health issues could be raised in the context of the woman's emotional adaptation. Where indicated, nurses could also find other community resources to meet the physical or material impediments to appropriate diet. Specifying program objectives and evaluating progress toward them through specific nurse activities allowed staff to identify problems promptly and to revise the program plan to respond more appropriately to individual family needs.

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CASE 2

A demonstration project involving twenty-three public health nurses from five states aimed to help nurses use new research findings to address a worrisome clinical problem. Extensive contact with nurses throughout the country had yielded widespread concern about the "burnout" observed in many parents of premature infants toward the end of the first year. Project staff reasoned that awareness of new findings about the documented less-responsive behavior of premature infants and about the apparent success of some parent oriented intervention programs would help

nurses better tailor their care to parents of these babies. Two objectives were sought: 1) increased satisfaction of the nurses providing such care; and 2) increasingly optimal parenting of the preterm infants themselves.

Project staff developed an intensive week-long training program, in which nurses were exposed to recent research on preterm infant behavior, parenting, and the ecology of infants and families. An 8-visit nursing protocol was also developed to assist the nurse in focusing with families on the particular problems of parenting a less mature, less well-organized and less responsive infant.

Nurses placed considerable emphasis on teaching the mother an awareness of her infant's state changes and cues, and how to use these cues as a basis for providing an optimal interaction with her infant. Specific techniques were taught for arousing the infant in order to bring him to a more alert state for feeding and interacting. Behavioral responsiveness was discussed and demonstrated, and the mothers kept observation records of how their infants responded in various situations. These principles were then applied specifically to the feeding situation. After nurses observed mother and infant at feeding time, the mothers were given feedback and suggestions for improving the interaction.

The results of field trials of this program suggested that both of its objectives were being met. First, nurses' evaluations collected throughout the project reflected their increased satisfaction in providing care to families of premature infants. After the six-day training workshop, participating nurses reported feeling moderately confident in applying what they had learned and highly interested in carrying out the field trials. As they conducted and reported on the eight contacts with each family specified in the protocol, nurses reported feeling increasingly confident of their own competence and increasingly satisfied with the protocols.

Second, the results from the field trials suggested that better parenting of the premature infants in the project was occurring. While direct comparisons to non-intervention samples could not be made, data from observations of project parents and infants, particularly during feeding, suggested that the mothers and preterm infants in this program showed a different developmental course in their interaction from those in non-intervention studies of mother-preterm infant interaction. In particular, the typical interaction patterns of a hyperattentive mother and an unresponsive infant were not seen in this sample; when their infants were three months old, the mothers in this sample were performing at about the same level as mothers in a normative sample of term infants, and the infants were as responsive as term infants of the same conceptional age. By the time the preterm infants were 4 months old, the mothers appeared to be more attentive than mothers in the normative sample of term infants; at the same time the project infants were themselves becoming more responsive. Finally, the tendency observed in non-intervention studies for mothers of preterm infants gradually to reduce their involvement with the infants during the second six months of life was not seen in this sample. When their preterm infants were 7 months old, the mothers in the project were showing no evidence of "burnout."

Although the interaction patterns observed could not be attributed directly to the intervention, the findings appeared to be a logical consequence of the specific training provided to the mothers.

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CASE 3

When a Massachusetts early intervention program for disabled infants and toddlers was faced simultaneously with increasing demands for service, limited resources, and staff concern about the appropriate mix of service being delivered, program administrators engaged an independent evaluator to assess the program's service model and organizational structure. The evaluator conducted a relatively simple client satisfaction survey and a series of interviews with staff members of the multidisciplinary team, many of whom felt over-extended and expressed persistent concerns regarding the mix and relative benefits of program services. Three major components of the early intervention program (which is based in the community and affiliated with a university hospital) were examined critically: home visiting, center-based group

activities, and hospital-based clinic services.

Virtually all parent respondents to the client questionnaire identified home-visiting as the most crucial element of the early intervention program. At a time when the high cost of home visits was generating pressure to curtail them, the unanimity of parental praise for this service format was a tremendous boost to staff morale.

The parent questionnaire also revealed that large numbers of previously uninvolved fathers were interested in participating in home visits if visits could be scheduled in the evening. (At the time of the survey, involvement of fathers, which had grown in recent years, stood at 55% of upper income and 20% of lower income families; an *additional* 30% of low income and 27% of middle income fathers indicated interest in evening home visits.) In response to this information, the program introduced flexible staff work schedules, and fathers did, in fact, become increasingly integrated into program activities.

The relative under-emphasis on center-based programming in the existing service model elicited a variety of interesting responses. Although three-quarters of those parents participating in such activities were satisfied with their frequency, a significant number expressed an interest in more sessions each week. Moreover, although parents rated the emphasis on family support groups very highly, parents also expressed a desire for expanded opportunities for child-oriented, center-based programming. Staff comments on center-based programming, on the other hand, focused on the insufficient allocation of time and resources for planning center-based activities. Several team members noted that whenever service demands became excessive, home-visiting and clinic attendance were given priority over expansion or refinement of center-based activities. As a result of this evaluation, a senior educator was appointed coordinator of center-based educational programming, and was given time for the necessary organization work. Child-oriented activities in conjunction with parent-support groups were also expanded. These activities were extremely well received by parents and staff, and proved to be an economically viable way to augment the team's service capacity.

Assessment of the role of clinic evaluations turned out to be one of the most sensitive staff issues explored by the outside evaluation. While all team members agreed that clinic visits were important, many expressed feelings that such visits occurred too frequently and subjected parents to a cycle of anticipatory anxiety, followed by post-clinic disequilibrium or "let down". Staff expressed particular concern about the routine use of a one-way viewing mirror for training purposes, which was seen as adding to parental stress during clinic visits. The parent survey, on the other hand, documented a considerable degree of satisfaction with the clinic experience. Eighty-two percent of parents felt that visits were often enough, while 13% indicated a preference for even more frequent clinic contact. Although some parents expressed discomfort with the viewing mirror, only 15% disapproved of its use and most, despite their feelings about "being watched," acknowledged its potential benefits. It was felt that these findings did not invalidate staff impressions regarding parental anxiety in the clinic setting, but rather suggested that parents could tolerate anxiety in order to have ongoing opportunities to learn more about their child's developmental diagnosis and prognosis. The analysis and reporting of these findings led to greater staff comfort with the clinic format, and enhanced staff members' ability to support families both before and after their hospital appointments.

In summary, the use of an outside evaluator to conduct a simple client satisfaction survey and series of staff interviews provided an important opportunity for team members to voice concerns, assess the relative contributions of each of the major components of their early intervention program, and generate strategies for change. The resulting data provided much needed positive reinforcement for an extremely talented and hardworking group of professionals, and yielded specific feedback that helped to formulate ideas for program refinement.

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CASE 4

The experience of an interagency network in a northeastern city provides an excellent example of the contribution that can be made by record-keeping. This consortium of agencies providing services to pregnant adolescents and teen parents was established to increase the likelihood that teenagers needing services would receive them and to decrease service duplication. As might be expected, in its first year of existence the program lacked a centralized method of record-keeping. Agency A, a health clinic, recorded names, addresses, ages and dates of services, but made no note of whether their teenage clients were still attending school. Agency B, a school program, recorded school status, but did not maintain information on family income. Agencies C, D, and E differed similarly, according to whether they were social agencies, parent education programs or other service providers. None of the agencies kept information on service delivery in ways that permitted simple comparisons; few kept records of referrals made to other agencies.

The first task in the evaluation plan was to create a summary card on which information pooled from all agencies serving a client could be maintained by a person responsible for overseeing the work. Thus, in a single location, (under a coded name to preserve confidentiality), pertinent school, medical and family data for a given person became readily available. Second, the group developed a standardized card which each agency agreed to use to record the dates of individual contacts (e.g. counseling sessions, home visits, medical treatments) and of group contacts (e.g. attendance at classes or group sessions) for each client. The availability of a simple standardized method of recording such contacts resulted in much improved documentation of service delivery in the first quarter of its implementation. When a space to record referrals was added, these cards also became the basis for documenting which clients were seen by more than one agency, when, and why.

A process such as the one just described may seem too mundane to qualify as "evaluation." Yet soon after its implementation several positive changes resulted. For example, gaps in record-keeping became apparent early enough for the staff to fill them in before the information was forgotten. Failure to record a student's school status or the medical care arrangements for the child of an adolescent mother left a noticeable hole in the records. Correction of these gaps led administrators to discover that, in some cases, no medical care arrangements were in place and to correct the situation. The frequency of appropriate referrals between agencies increased. For example, as data revealed that health providers seldom referred school dropouts to school agencies, program administrators could change their procedures to address a hitherto unrecognized problem.

For more information, write to:
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CASE 5

In a Connecticut high school for pregnant teenagers, an evaluation helped to document the high degree of community acceptance of the program and to improve the effectiveness of its outreach. This program had been in existence for over ten years when an evaluation was undertaken. The staff had excellent records of the number of students admitted, the schools from which they had entered the program, and the schools to which they returned after delivering their babies. However, these records had not been used to the fullest extent possible for evaluation purposes. Once the staff began to view records as tools for evaluation they were immediately able to show that 88% of the students who became pregnant while enrolled in school were successfully identified and referred to special intervention, and that 92% of those who were referred became motivated school program attenders. This information raised staff morale and demonstrated to potential funding sources that the program was almost always successful in accomplishing its objectives.

The kind of information just described could also be used to improve service delivery. By examining cases where pregnant teenagers had not been referred to the special school, evaluators found that these were often students who were transferring from one school system to another

(e.g. from 8th grade at middle school to 9th grade at a high school) and who became pregnant in the spring or summer. Knowledge of this fact suggested a possible approach to better service delivery through more careful monitoring of the transition process from one school to another. Bringing the pregnant "no show" student back into a special program in the fall could add a small but important group of previously missed clients.

For more information about this evaluation, write to:
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CASE 6

An early intervention program located in the heart of a California city is a resource for assessment, treatment, education and consultation to a range of referring agencies that are concerned with infants and toddlers and their relationship with their parents. The program serves a low-income, multi-ethnic, multi-problem population whose infants and toddlers are often gravely at risk for, if not already victims of, severe neglect and abuse. These are people who often lack the organization necessary to keep regular office appointments and who need consistent, unswerving outreach efforts to establish any connection at all.

As part of a larger evaluation effort, this program decided to examine its assessment activities, which generally involve five or six home visits with each family referred. It should be noted that families are often referred by the court for assessment, and that the immediate issue may be whether protective services involvement is appropriate.

The process evaluation began with a careful description of each familiy referred and the reason for the referral. Staff delineated what areas needed to be assessed and what steps would be necessary to fulfill the request. These became the objectives for the assessment. For example, since many families were difficult to engage, it was sometimes an "objective" to establish a working relationship such that an assessment could be completed. Absurd as this might sound as an objective, it was an outcome often hard to achieve and of great interest to the agency and its funders.

Agency staff decided to see if they could determine what circumstances were associated with success and failure in meeting the objective of establishing a working relationship. They found they were successful in establishing a relationship in 92% of the cases where only an evaluation was being requested. They were successful in only 70% of the cases where the referral was court mandated and the Department of Social Services was involved. They were successful in completing the assessment 100% of the time if two home visits had been completed.

Such details were instructive. Staff learned from examining the records that they could not be shy about addressing the family's negative feelings about the assessment process and that they would lose the family if every opportunity to acknowledge their anger and dismay were not fully exploited. Studying the detailed notes made on each visit, they learned that efforts to engage the family were successful when workers placed a heavy emphasis on interpreting the negative feelings of the parent, and unsuccessful when such interpretations were less frequent. That piece of information helped therapists focus on difficult, but essential, emotional issues with parents early in the assessment process and told supervisors what issues needed to be emphasized with trainees. Evaluation in this case confirmed theoretical knowledge and clinical perceptions and ensured that these would be sufficiently emphasized in practice and training.

For more information about this evaluation and subsequent studies, write to:
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CASE 7

A home-based Community early intervention program sponsored by Departments of Public Health, Social Services and Mental Health in Colorado is geared toward the prevention of parenting dysfunctions during the prenatal period and the infant's first three years of life.

A year-end progress report for the second year of the project provided readers with a description of program activities in relation to the goals of

the program. The report also described how the project had used its own rating scales and standardized measures to assess infant and family functioning as families entered the program and during the course of intervention.

1 To ensure the health, safety and developmental progress of infants from birth to three.
2 To strengthen family development during the early parenting experience.
3 To engage in community education concerning the importance of primary prevention for children zero to three. In addition to the program goals, specific goals are established for each individual and family.

Since the project was originally conceived, in part, to respond to the need for greater coordination among the several county agencies that often become involved in the treatment of families with young infants, the year-end report took pains to document that 65% of all the project's cases involved coordination. About 25% of cases involved coordination among public health, mental health and social services; another 7% between social services and mental health; and 35% between public health and mental health. The report also analyzed referrals to the project. In the second year, referrals increased by 30% over the first year. Forty-six percent of referrals were for pregnant women; 41% for mothers with an infant under six months of age, and 14% for mothers with older infants. More than 13 agencies and professionals made referrals to the project; 46% of all referrals were made by agencies and clinics serving low income families. The project made 18 community education presentations in state and two presentations out of state during the year.

Project staff identified ten issues as risk factors for parenting dysfunction and devised a scale assigning greater weight to some factors than to others. For example, a major psychiatric disorder, spouse abuse or a history of abusing one's own children was weighted as a more significant risk for parenting dysfunction than having past or current criminal involvement, an expressed desire to abort or relinquish one's infant, or having a premature or handicapped infant. Project staff described 31% of the families served in the program's second year as low to moderate risk, 40% as moderate to severe, and 29% as severe to critical.

In addition to looking at the risks of parental dysfunction facing participating families, project staff also assessed family dysfunctioning by several means. Within eight weeks of their initial visit with a family, therapists complete a family functioning scale that looks at eight areas related to parenting; a family can be described as performing at an adequate or marginally adequate level or as moderately, seriously or critically impaired in each area. Therapists administer to mothers themselves two self-report measures. One of these taps mothers' self perceptions and the degree to which these are distorted; the second measure gauges the appropriateness of mothers' attitudes about aspects of parenting such as appropriate expectations of infants and use of physical punishment.

Analysis of the risk factors and measures of functioning revealed that upon program entry, mothers generally functioned at a very impaired level. More than half expressed inappropriate attitudes toward parenting and nearly half function at a serious to moderately impaired level in most aspects of family life. That this was so should not be surprising: three-fourths of enrolled mothers were abused in their own childhood and about half had a serious psychiatric disturbance or were mentally retarded.

Approximately six months after the initial family functioning assessment was completed, therapists again completed the Family Functioning Scale and administered the two self-report instruments to the mothers. The project's second-year report provided complete data for the Family Functioning Scale for 30 families and on the self-reports for 15 families. In six of the eight areas of family functioning delineated by the project's scale, between 55 and 77% of families were described as functioning at a marginally adequate level after six months of program participation. In two other areas (family conflict and appropriate expectations of infant), families showed some improvement, but more than half of the families continued to function at the moderately to severely impaired level. The greatest improvement in attitudes was seen in the area of physical punishment. Early in therapy 45% of mothers tested expressed appropriate attitudes; six months later the proportion had risen to 87%.

In assessing the growth and development of infants in the project, staff looked not only at Bayley scores but also at growth data (since low birth weight, feeding difficulties, and poor weight gain were prominent issues in project families) and at the incidence of child abuse reports and

out of home placement. Among families enrolled in the project's second year, only one child presented significantly delayed development and only one child abuse report was filed.

The project report also described in some detail the types of contacts made by staff and volunteers, the themes frequently repeated during contacts with families, and the differentiation of roles among nurses, volunteers and mental health therapists. The report documented that the 4.5% "no show" rate was half that of the first year of the project and less than 40% of the rate recorded by other treatment teams at the Mental Health Center.

The second-year report concluded by outlining plans for expanded evaluation efforts in the third year. Staff planned to gather growth and development data on infants more consistently in order to achieve a more complete picture of the program's impact on infants. This would include administering nursing assessment forms, videotaping intake evaluations and Bayley Developmental testing. Staff also hoped to plan an expansion of research efforts to comparison families outside the program, in order to better document the strength of program interventions in creating the changes observed in enrolled families.

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CONCLUSION

This publication is subtitled "a guide to program evaluation for administrators and practitioners." Like a guidebook, it attempts to delineate features of what is likely to be unfamiliar territory for its readers. Like a guidebook, it also presumes that the region described is worth spending time, energy and resources to visit.

As is evident throughout *Charting Change in Infants, Families and Services*, its authors and the National Center for Clinical Infant Programs are convinced that providers of services to infants, toddlers and their families have themselves much to gain by making program evaluation a central, ongoing part of their daily work. We also believe strongly that the knowledge achieved through both process and outcome evaluations is not only essential to advancing our understanding of children and families, but also critical to the formulation of sound public policy.

Staff of the National Center welcome inquiries about the issues raised in this publication. *Zero to Three*, the bulletin of the National Center for Clinical Infant Programs, also provides information about conferences, publications of other organizations, and other program evaluation initiatives in the field of services to young children and families.

Appendix: Domains of Concern

In setting goals and objectives for a new intervention program or in clarifying the objectives of an ongoing service to children and families, providers should consider the many areas connected to the development or impairment, support or stress of a young child and family. These "domains of concern," as we refer to them, are areas where change may be observed over time as well as areas that may serve as targets for intervention. It is our view that all of the factors relevant to the functioning of a family or a parent are also ultimately salient to the well-being of a child. Social, cultural, economic and psychological forces are all capable of expression in moment-to-moment interactions between a parent and child. These interactions, in turn, in large part determine the experience of the child and influence his development in significant ways.

As we describe a number of domains briefly, it is not our intention to suggest that programs serving infants, toddlers and families must evaluate program or participant functioning in any particular domain or that programs could attempt to address anywhere near all of these areas. Neither do we wish to prescribe intervention strategies, particular evaluation approaches, or measurement tools. Rather, by suggesting the range of factors that affect child and family development in the earliest years of life, how factors may interact, and the kinds of positive change that may result from intervention, we wish to encourage service providers to incorporate observations of these areas into the standard record-keeping procedures of their programs, so that systematic assessment of functioning over time becomes possible.

The broad domains of concern described below include interaction between service provider and family, characteristics of the parent, characteristics of the child, parent-infant interaction, the child's family, and the community.

We hope that professionals serving infants, toddlers, and their families will keep in mind the many factors involved in early development as they go through the steps of process evaluation. There is more to influence, and more to observe, than a child's IQ. Each program staff can design both intervention and evaluation strategies to fit its own resources and interests and to reflect the unique characteristics of the families it serves.

Interaction Between Service Provider and Family

Although we have stated earlier that service providers should generally decide for themselves which domains of concern to address in assessment, intervention and evaluation, we suggest that close attention must always be paid to the domain of interaction between service provider and family. A trusting relationship is an essential element in the delivery of any service to young children and their families. Without such a relationship, information and offers of assistance are likely to be disregarded.

A fundamental element of most program improvement evaluations, then, should be systematic attention to the nature of the relationship between the service provider and the program participants. With very young children, programs are often directed more to parents than to children; consequently the issues raised here will apply primarily to the interaction between the service providers and the adult family members. Many of the principles develped here, however, also apply to work carried out directly with children.

- **The Context of the Service Provider-Family Relationship**—Both service provider and family members bring to their experience organizing attitudes and powerful feelings based on their histories of involvement with their own families of origin and with other professionals who have attempted to be of service. More specifically, the authority of the service provider almost automatically evokes in the client feelings which were

experienced toward past figures of great authority and importance. If practitioners are oblivious to this powerful source of clients' feelings toward them, the working relationship may be seriously impaired. Whenever a significant problem arises in the service provider-family relationship, one needs to question what about the family member, the service provider, or the content of the relationship has contributed to the difficulty.

- **Degree and Quality of the Participant's Involvement**—One may begin by simply noting how frequently scheduled sessions are cancelled or forgotten. One may then go on to observe the emotional tone expressed by the participant toward the service provider; the degree to which the participant attends to and engages in relevant conversation with the provider; and signs either of behavioral change or cognitive/emotional adaptation in the participant.

- **Degree and Quality of the Service Provider's Involvement**—The frequency of cancellation of scheduled sessions by the provider and the emotional tone of his or her behavior toward the participant may be noted. One can also explore the degree to which the service provider adapts the program plan to the needs of the family. Finally one may ask whether the provider acknowledges the participants' accomplishments and communicates that acknowledgment to them.

The Parent

His or her strengths and vulnerabilities, life stresses and coping mechanisms are worth considering in themselves as well as in their relation to the family and child.

- **General health**—A chronic health problem or disability could be a source of psychological stress and limitation on functioning which might respond to physical intervention and/or psychological support. Assuring continuity of health care for a parent could affect variables ranging from the parent's relationship to the service provider (one might see a positive response to the clinician's concern for the parent's own well-being) to the level of energy the parent has available for daily living and for the child.

- **Socio-emotional functioning**—The presence or absence of major psychopathology is important, but so are an individual's dominant moods and style of dealing with other people. Developing a trusting relationship with an isolated, suspicious parent may involve months and even years of persistent, unrewarding outreach—but this may prove to be *the* intervention that makes it possible for the parent, and ultimately the child, to cope more effectively.

- **Cognitive functioning**—Parents' judgment, problem solving ability, and capacity to organize thoughts are critical to the success of most interventions on behalf of young children. With a cognitively limited parent, one might work to support the warmth of feeling for a child and the capacity to assure good physical care but also provide opportunities out of the home for the child to develop his or her cognitive and imaginative capacities. When a parent's cognitive functioning is impaired by depression, on the other hand, one might look for improved cognitive functioning as depression lifted and greater ability to use cognitive abilities on behalf of the child.

- **Life-course development**—Parents of infants and toddlers go back to school, find or lose work, increase or limit their families (intentionally or not), sustain or rupture relationships, move to different neighborhoods. All of these behaviors affect the child as well as the parent; all might be influenced by participation in an early intervention program, and all can be observed.

- **Parental functioning**—How the parent functions *as a parent* to a particular child is of course central to the concerns of any early intervention program. Five areas may be particularly useful to consider:

1. *Physical caregiving*—Parents' provision of adequate diet, clothing, health care, hygiene and physical safety for their young children is a fundamental consideration. With severely disabled children, sophisticated clinical skills and complex intervention strategies may be needed to enable parents to provide such basic levels of care. On the other hand, an intervention program which teaches and motivates a mother to engage in the basic practice of holding her baby for feedings rather than propping the bottle may have accomplished something very important, resulting in lasting changes for both mother and infant.

2. *Parent's attitudes about himself or herself as a parent*—Both the parent's overriding emotional tone toward the child and the parent's attitude toward himself or herself as the child's

parent may be affected by intervention. Many parents of frail or disabled infants, for example, first regard their "defective" babies as undesirable parts of themselves. The experience with a high-tech neonatal intensive care unit may leave such parents feeling helpless about their ability to care for their child. A goal of intervention, then, may need first of all to include restoration of the parent's self-esteem and development of the capacity to experience some pleasure in the child.

3. *Psychological availability*—Included in this area are the parent's awareness of the child's developmental needs (including the need for a stable caregiver); the ability to "read" the cues and signals of an infant or young child; the appropriateness and contingency of the parent's response to these cues; the parent's capacity to observe and report the child's behavior; the parent's ability to view the child realistically, as a separate person with unique strengths and vulnerabilities; and the parent's capacity to protect the child from involvement in emotional conflicts in the home.

4. *Appropriate communication*—A parent communicates with an infant in many ways, including voice, touch and gaze. Does the parent talk to the baby at all? If so, does she use the tones of "motherese" appropriate for an infant? Is the parent's touch appropriately playful, or impersonal or intrusive? Are the gaze patterns of parent and infant generally in synchrony, or do parent and baby look away from each other? Some frail babies cannot tolerate the kind of communication appropriate for healthy infants, and parents may need special guidance in modulating their voice, touch and gaze. Similarly, parents of children with sensory deficits may need help in communicating with their babies through pathways that are available.

5. *Parent as teacher*—For the infant and toddler, the parent is largely responsible for creating experiences that are appropriate and challenging for the child's stage of cognitive and emotional development. The parent also chooses the supplementary care that the young child will receive. Do parents take appropriate responsibility in these areas? Are they sensitive to the child's individual strengths, vulnerabilities and temperament as they make choices?

The Child

Although the number of aspects of a child's development and behavior far exceeds the capacity of any single program to address or measure, it is important, nevertheless, for purposes of both program design and evaluation, to be aware of the multiple lines of child development and behavior which one might address (and which will continue to affect each other, the parent, and the family whether one addresses them or not).

It is worth noting, too, that most programs for infants and their families have been targeted toward two related yet distinct populations. One group includes children with few or no significant biological disabilities, whose vulnerability is related largely to environmental risk factors such as property, social disorganization or parental psychopathology. Normative development is possible for such children and service goals focus on the prevention of developmental or behavioral deterioration despite substantial environmental stresses. The second target group for early intervention services is composed of young children with specific biological disabilities for whom atypical development is unavoidable. For this latter group, goals focus on the facilitation of adapative behavior and developmental competence within the limits set by each child's individual profile of strengths and deficits.

Although these two target groups share many generic needs, their essential differences underline the dangers of relying solely on a single intervention strategy or a single instrument or uniform test battery to evaluate functioning. Service providers and parents point out with great justice the failure of normative psychometric tests to reflect the full range and depth of program impacts. Designing interventions targeted toward specific domains of concern with specific groups of children and with individual children should increase the likelihood that intervention efforts will have a discernible impact. By the same token, ongoing process evaluation offers an opportunity for both more inclusive and more creative measurement efforts across multiple lines of child development and behavior, efforts which may vary according to the specific goals and objectives of each individual intervention program and each individual intervention.

• **Physical health**—The child's health, physical growth and development may all be affected by intervention. In our enthusiasm for educationally oriented programs for very young children, we must not forget to pay attention to physical well-being during the earliest months and years of life, both as a factor influencing other aspects of development and as a fundamental indicator of well-being.

• **Temperament**—Child development research over the last thirty years increasingly points to the unique temperament of the individual infant as a factor with potential implications for developmental outcome. Several aspects of temperament are listed below.

1. *Responsiveness-engageability*—Few who deal with infants or toddlers can have avoided hearing young children described in terms of their ability to "engage" a parent or other adult. Indeed, some sophisticated practitioners describe particularly lusty, attractive babies who are able to engage even depressed or aloof parents as "bringing their mothers along." Conversely, the lack of early response of many premature or medically vulnerable infants may exhaust parents who try frantically but unsuccessfully to engage their infants. By interpreting the baby's behavior and helping parents to find appropriate ways of approaching their child, professionals can help parents make good use of the opportunities for interaction that do exist.

2. *General adaptability and coping*—This category includes the baby's activity level (which may delight, disappoint or assault, depending on what it is and who the parent is); the clarity of signals (muted or vigorous); the infant's soothability (by a mere touch, by walking or rocking, or only by an hour in an infant seat on a vibrating clothes dryer); the overall vulnerability or coping ability with regard to stimuli; the predictability of the child, and the sense of a baby's being generally "dependent" or "independent." All of these qualities have a dynamic and important impact on the developing relationship between infant and parent and can be observed and understood in terms of that impact. The child's range of behavior, from mastery to inhibition, suggests to the observer how inherent, unique capacities have meshed with the environment, and how well the child copes with the ordinary circumstances of his or her age in life.

• **Physical appearance and dominant mood**—A baby's looks and dominant affective mood are both capable of evoking powerful responses in parents. Each may please or displease, raise or lower parental self-esteem, create significant psychological links to previous important people in the parent's life, and play a role in how the child and adult will adapt to one another. Helping a parent to see a baby with a physical deformity or a difficult temperament as a separate individual rather than as a reflection of some parental inadequacy can be a crucial first step in mobilizing a parent's energy on behalf of the child's development.

• **Motor development and activity**—The developmental level of a young child's gross and fine motor skills, and signs of delay or deviation from norms; use of motor skills in daily life; and the style and degree of control observable in a child's activity are all important. In this area, attention to one domain is likely to have reverberating effects and increase the discernible impact of the intervention in other areas. For example, if a physical therapist works with a child to achieve a motor skill that is meaningful to the child and to the parents, one that will make a real difference in the quality of daily family life, the effects of such success may be felt in the area of social development as well.

• **Social/emotional functioning**—Too often neglected but extremely important are a young child's capacities for social communication; social competence (as reflected in average, expectable behavior with others); affective expression (range, intensity and appropriateness); and characteristic relationships with parents, siblings, other family members and friends, peers and strangers. It may be that for some young children an intervention program would increase their social competence (and ultimately school achievement), even though their IQs remain largely unchanged or a disability only moderately reduced.

• **Cognitive functioning**—This is the domain most likely to be noted and measured, but often in a very narrow way if a Bayley Mental Development Index or Intelligence Quotient are the only measures considered. It is also important to be aware of patterns of strengths and weakness and evidence of the child's use of cognitive development in the service of play and adaptation. With physically disabled infants in particular, it is important to recognize how much the standard tests of early development rely on motor skills. Infant specialists who have devised ways of carefully observing the visual attention of babies with physical disabilities have found that

sharing their assessment with parents can in itself be a powerful intervention, giving parents a new sense of their child's capacities.

- **Language**—Language tends to be a very sensitive and complex index of a child's functioning. For example, the degree to which language is used appropriately reveals much about the quality and type of social interaction to which the child is accustomed. For the developing toddler, language gradually becomes a tremendous source of inner control and ability to delay impulses. Those attempting to assess this area should remember that a child's capacity to use language is extremely sensitive to unfamiliar settings.

- **Play**—Play is the "work" of the young child—a unique way to learn about the world and a creative way to express knowledge and the meanings children give to people, places and events. Play has been described as an index of children's imagination, curiosity, motivation, preferences, interests and persistence. Encouraging the young child's growing and changing capacities for play can be an important goal of intervention. For example, some children who show no signs of cognitive deficit do demonstrate delay in the development of an interest in play in general, and in the development of symbolic play in particular.

  Play is also a valuable tool in clinical assessment and treatment. Whether in structured, semistructured or unstructured settings, observation of play provides ways of examining young children's perceptual skills, motor dexterity, and relationships with parents and other children. Assessment of play can be an alternative or supplement to formal testing.

Parent-Infant Interaction

Parent and child interact constantly around eating, sleeping, play, discipline, brief separations and language development.

Just as one may observe the parent and the child as individual entities as well as in their respective roles as parent and as child, one may also observe the quality of the parent-child interaction itself as it appears in these daily encounters. Obviously, the capacities parents and children bring to their interaction are those listed in the preceding sections on "The Parent" and "The Child." The focus here, however, is on what is happening in the relationship.

- **Mutuality and reciprocity of child and parent**—In this area of major concern, one is interested in observing gradually developing shifts in the degree to which each partner adapts to the other. When the infant is doing all of the adapting, the cost to the infant is tremendous. When the parent of a 20-month-old is still doing 90% of the adapting, the cost to both child and parent is huge. As the infant or toddler matures, the balance should change as the child's adaptive abilites are enhanced or increased.

- **Dominant affective tone and intensity of engagement**—The quality of the feeling tone present during the majority of parent-infant interactions is singularly revealing of how parent and baby are coming to feel about one another. The dominant mode of interaction should be positive rather than negative. The warmth of interaction is often a major strength in families, a solid foundation supporting intervention in other areas. The intensity of the engagement is also important to note. Interactions, ranging from the most positive to the most negative, can vary greatly in intensity. Total lack of interest may also be observed.

- **Frequency of interaction**—How often a parent and infant interact during the course of a home visit, during a day, or during a week represents a basic parameter of the relationship. One would expect to see change as a result of maturational factors and social circumstances, and such changes—or lack of them—can be well worth noting and documenting.

- **Typical modes of communication**—As the parent's abilities to communicate with the child through voice, touch and gaze were discussed above, so these modes of communication can be examined and addressed as one looks at the interaction between child and parent. Intervention may help a parent learn special techniques of communicating with a vulnerable infant or may support an infant or toddler's efforts to elicit responses from a withdrawn parent.

- **Play**—In addition to being an aspect of a child's development, play can also be considered and observed as a particular kind of parent-infant interaction and as communication. As the relationship between a parent and child improves, the child's play may show sudden, accelerated development.

The Child's Family

The Family is the context for the child's emerging development. Strengths as well as tensions of the family group are important to consider in both planning and evaluating intervention efforts. Ideally, interventions both uses and builds family strengths.

- **Family composition**—There are several ways to determine who is in the family. One method is identifying household members; another is having the family define itself. The "household family" is involved in daily life while the broader definition generally includes immediate family members as well as extended family and family-like friends. It is important to know and understand the patterns of relationships within the family. Information about frequency of contact and how each member fits helps fill in the picture of relationships. Some families have an enormous number of closely connected persons while others have few. Some severely isolated families consist of only a mother and child—truly alone.

- **Family resources**—An effective intervention program with young infants relies on parent and family resources. It is important to know about the family's available resources for coping with family problems. Examples of such resources include: health of parents, financial resources, regular access to health care, sources of information about family and health problem, community programs, and positive feedback from the children themselves.

  It is also useful to assess the degree of life change recently experienced by the family; the amount of confidence parents feel in their ability to provide the resources their children need; and their interest in learning how best to care for their children.

- **Informal social support**—What sources of emotional and social support do family members have and which do they use? Models of child and family development increasingly emphasize the importance of informal social support as a factor to be considered as either an area affected by early intervention programs or as a conditioner of program effects. Positive relationships with extended family, friends and neighbors, religious and community associations and parent-to-parent groups are often important sources of social support.

- **Marital relationship**—The marital dyad can be a source of potential strength or of tension for the family. When there is satisfaction in the relationship, clear communication, shared problem-solving and support, the family unit is greatly strengthened. On the other hand, marital or partner conflict served to reduce the family's cohesion and adaptability. Single parents have less support available for dealing with both daily stress and the long-term course.

- **Family cohesion**—This quality refers to how well the family pulls together in dealing with their responsibilities. There are two undesirable extremes: uncohesive families, where members do not help one another or work toward common goals, and "enmeshed" families, or closed systems, where no one outside the family system is allowed to help.

- **Family adaptability**—This refers to the family's capacity to order responsibilities as well as to handle crises and situations that are unexpected or require high resources. The emotional, physical and financial energy available to the family influences its adaptability. Emotional energy comes from satisfying interpersonal relationships, whereas physical and financial energy come from strong individual members who have positive self-esteem and productive skills.

The Community

- **Social and economic conditions**—These are likely to have profound effects on the operation of the program and the functioning of families. They need to be addressed explicitly in any thorough evaluation report in order to place the program in context.

- **Availability of other health and human services**—The content and number of other services for families in a program's target population should be considered, as these other services are likely to influence both the operation of the target program and the functioning of families. It also has been shown that the implementation of a new demonstration project often stimulates the development of other services for the target population and can influence the operation of existing programs.

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